# Cisco Aironet 350 Series — Client Adapters

## Product Overview

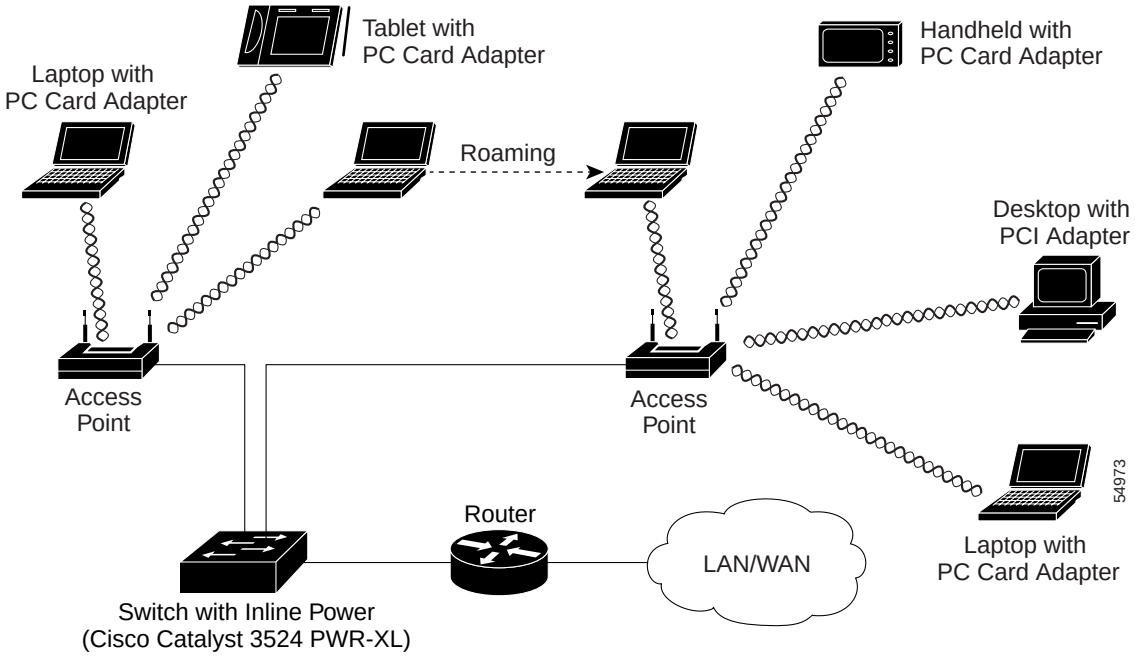
Wireless client adapters are the key to adding mobility and flexibility to an enterprise-increasing productivity by enabling users to have network and Internet access anywhere within a building without the limitation of wires. The Cisco Aironet 350 Series Client Adapters are a complement to Aironet 350 Series infrastructure devices, providing an enterprise-ready solution that combines mobility with the performance, security, and manageability that people have come to expect from Cisco. Wireless client adapters connect a variety of devices to a wireless network either in ad hoc peer-to-peer mode or in infrastructure mode with APs. Available in PC Card (PCMCIA) and Peripheral Component Interconnect (PCI) form factors, Cisco Aironet 350 Series Client Adapters quickly connect desktop and mobile computing devices wirelessly to all network resources. With this product, you can instantly add new employees to the network, support temporary workgroups, or enable Internet access in conference rooms or other meeting spaces.

## Key Features and Benefits

Features include:

- Superior range and throughput
- Secure network communications
- World mode for international roaming
- Full-featured utilities for easy configuration and management
- Compliance with the IEEE 802.11b high-rate standard
- Support for all popular operating systems

**Figure 26-3: Client devices equipped with wireless client adapters can roam freely throughout a facility via communications with multiple APs.**



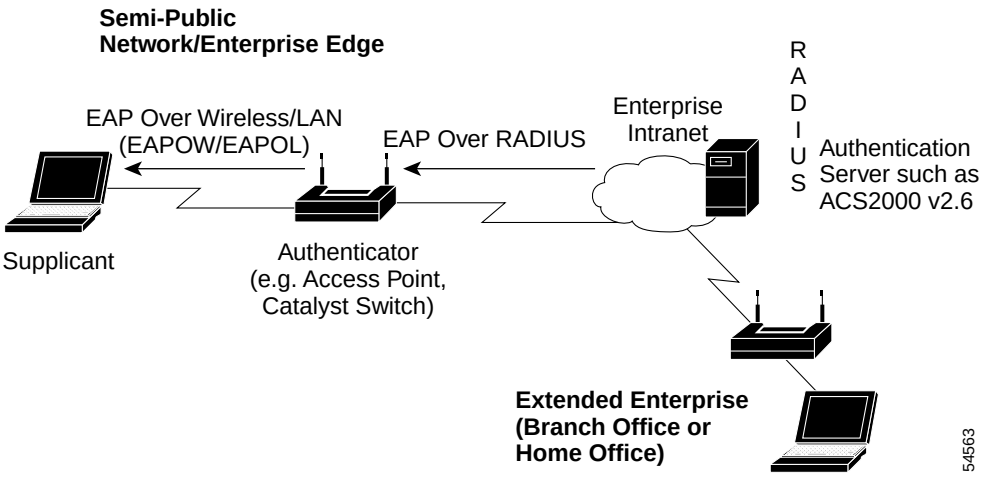
## Ethernet Speed and Improved Range

With a full 100 milliwatts (mW) of transmit power and the best receive sensitivity in the industry, the Cisco Aironet 350 Series Client Adapters provide the longest range and best reliability available for wireless clients. Advanced signal processing in the Cisco Aironet 350 Series helps manage the multipath propagation often found in office environments. Intelligent filtering addresses ambient noise and interference that can decrease network performance. Building upon Cisco leadership in wireless LAN (WLAN) performance, the Cisco Aironet 350 Series Client Adapters provide the greatest throughput available so users can enjoy virtually the same connectivity they gain from wire-line connections. Based on direct sequence spread spectrum (DSSS) technology and operating in the 2.4-GHz band, the Cisco Aironet 350 Series Client Adapters comply with the IEEE 802.11b standard-ensuring interoperability with all other compliant WLAN products.

## Industry-Leading Centralized Security Solution for the Enterprise

For installations that need to scale to hundreds or even thousands of users, all Cisco Aironet products feature an industry-leading centralized security architecture based on the IEEE 802.1x standard. Central to this architecture is the Extensible Authentication Protocol (EAP) that enables wireless client adapter manufacturers and Remote Access Dial-In User Service (RADIUS) server vendors to independently develop interoperable client- and server-side security software. This new security architecture provides centralized user-based authentication integrated with network logon via utilization of an EAP-enabled RADIUS server such as the Cisco Secure Access Control Server 2000 Version 2.6. When the user supplies a username and password, the client interacts with the RADIUS server through a Cisco Aironet AP. When the RADIUS server authenticates the client, the server and client negotiate a single-session, single-user encryption key and the RADIUS server transmits the key to the AP. With this centralized and standards-based architecture, wireless security scales to meet the requirements of any organization. Cisco Aironet 350 Series Client Adapters support the standard wired equivalent privacy (WEP) security architecture, and include 128-bit encryption keys.

**Figure 26-4: The 802.1x architecture implemented by Cisco is the first enterprise-ready security system for WLANs.**




## World Mode for International Roaming

Cisco simplifies deployment for international travelers and multinational corporations with a new client adapter setting called world mode. When placed in this mode, client adapters automatically inherit channel configuration properties directly from the Cisco Aironet AP to which they associate. This feature enables a user to use a client adapter around the world while still maintaining regulatory compliance.

## Enhanced Client Network Management Features with Extended Client Support

All Cisco wireless client adapters include the Cisco Aironet Client Utility (ACU), a tool with an intuitive graphical user interface that makes it easy to configure, monitor, and manage an adapter. The ACU includes site-survey tools that produce easy-to-understand, detailed graphical information, including signal strength, to assist in the correct placement of APs. The ACU now provides improved, quantifiable data, including signal-to-noise ratio measured in decibels (dB) and signal level and noise level measured in decibels per milliwatt (dBm). Using the ACU, a user can create a profile of settings for each

environment, such as the office or home, making it simple for telecommuters and business travelers to reconfigure the adapter when moving from one environment to another. A user can now configure channel selection, service set identifier (SSID), WEP key, and authentication method for these different locations. A broad suite of device drivers provides support for all popular operating systems, including Windows 95, 98, NT 4.0, Windows 2000, Windows ME, Windows CE, Mac OS Version 9.x, and Linux.

### The Preferred Client Solution for Mobile Professionals

Cisco Aironet 350 Series Client Adapters deliver superior range, reliability, and performance for business users needing information access anytime, anywhere. Combined with Cisco Aironet unique security services, this product ensures that business-critical information is secure. Most importantly, the Cisco client solution is easy to use, making the benefits of wireless mobility completely transparent.

## Specifications

### Hardware

**Table 26-6: Technical Specifications for Cisco Aironet 350 Series Client Adapters**

| Description | Specification |
|---|---|
| Data Rates Supported | 1, 2, 5.5, and 11 Mbps |
| Network Standard | IEEE 802.11b |
| System Interface | AIR-PCM35x: PC Card (PCMCIA) Type II<br>AIR-PCI 351x: peripheral component interconnect (PCI) Bus |
| Frequency Band | 2.4 to 2.4897 GHz |
| Network Architecture Types | Infrastructure and ad hoc |
| Wireless Medium | Direct Sequence Spread Spectrum (DSSS) |
| Media Access Protocol | Carrier sense multiple access with collision avoidance (CSMA/CA) |
| Modulation | DBPSK @1 Mbps<br>DQPSK @ 2 Mbps<br>CCK @ 5.5 and 11 Mbps |
| Operating Channels | North America: 11<br>ETSI: 13<br>Japan: 14 |
| Nonoverlapping Channels | Three |
| Receive Sensitivity | 1 Mbps: -94 dBm<br>2 Mbps: -91 dBm<br>5.5 Mbps: -89 dBm<br>11 Mbps: -85 dBm |
| Delay Spread | 1 Mbps: 500 ns<br>2 Mbps: 400 ns<br>5.5 Mbps: 300 ns 11 Mbps: 140 ns |
| Available Transmit Power Settings | 100 mW (20 dBm)<br>50 mW (17 dBm)<br>30 mW (15 dBm)<br>20 mW (13 dBm)<br>5 mW (7 dBm) 1 mW (0 dBm)<br>Maximum power setting will vary according to individual country regulations |

| Description | Specification |
|---|---|
| Range (typical) | Indoor:<br>130 ft (40m) @ 11 Mbps<br>350 ft (107m) @ 1 Mbps<br>Outdoor:<br>800 ft (244m) @ 11 Mbps<br>2000 ft (610m) @ 1 Mbps |
| Operating Systems Supported | Windows 95, 98, NT 4.0, 2000, ME, CE 2.0, CE 2.1, CE 3.0, Mac OS 9.x, and Linux |
| Antenna | AIR-PCM35x: Integrated diversity dipoles<br>AIR-LMC35x: Two MMCX connectors (antennas optional, none supplied with unit)<br>AIR-PCI35x: External, removable 2.2 dBi Dipole with RP-TNC Connector |
| Encryption Key Length | 128-bit |
| Authentication Type | EAP - Cisco Wireless |
| Status Indicators | Link Status and Link Activity |
| Warranty | Limited lifetime |

**Table 26-7: Power Requirements for Cisco Aironet 350 Series Client Adapters**

| Description | Specification |
|---|---|
| Input Power Requirements | +5 VDC =/- 5% |
| Typical Power Consumption (at 100 mW transmit power setting) | Transmit: 450 mA<br>Receive: 270 mA<br>Sleep mode: 15 mA |

**Table 26-8: Physical and Environmental Specifications for Cisco Aironet 350 Series Client Adapters**

| Description | Specification |
|---|---|
| Dimensions (H x W x D) | AIR-PCM35x: 0.1 x 2.13 x 4.37 in. (0.3 x 5.4 x 11.1 cm)<br>AIR-LMC35x: 0.1 x 2.13 x 3.31 in. (0.3 x 5.4 x 8.4 cm)<br>AIR-PCI35x: 0.5 x 6.6 x 3.9 in. (1.3 x16.8 x 9.8 cm) |
| Weight | AIR-PCM35x: 1.6 oz (45g)<br>AIR-LMC35x: 1.4 oz (40g)<br>AIR-PCI35x: 4.4 oz (125g) |
| Operating Temperature | AIR-PCM35x and AIR-LMC35x: -22 to 158˚F (-30 to 70˚C)<br>AIR-PCI35x: 32 to 131˚F (0 to 55˚C) |
| Operating Relative Humidity | 10 to 90% (noncondensing) |

**Table 26-9: Regulatory Approvals for Cisco Aironet 350 Series Client Adapters**

| Description | Specification |
|---|---|
| Compliance | Operates license free under FCC Part 15 and complies as a Class B device; complies with DOC regulations; complies with ETS 300.328, FTZ 2100, and MPT 1349 standards |

## Software

For software information on this product, see http://www.cisco.com/public/sw-center/sw-wireless.shtml

All software part descriptions and part numbers for Cisco products can be accessed using the online Cisco Pricing Tool at http://www.cisco.com/cgi-bin/order/pricing_root.pl

# Ordering Information

## Product Part Numbers

All part descriptions and part numbers for Cisco products can be accessed using the online Cisco Pricing Tool at http://www.cisco.com/cgi-bin/order/pricing_root.pl